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ZAGAZIG UNIVERSITY (BENHA)
FACULTY OF SCIENCE
CHEMISTRY DEPARTMENT

547,2

SYNTHESIS AND EVALUATION OF SOME STYRENE ALKYL METHACRYLATE COPOLYMERS

THESIS

Submitted to the Faculty of Science

Zagazig University - Benha

*In Partial Fulfillment of the Requirements for the Degree of
Master of Science (Organic Chemistry)*

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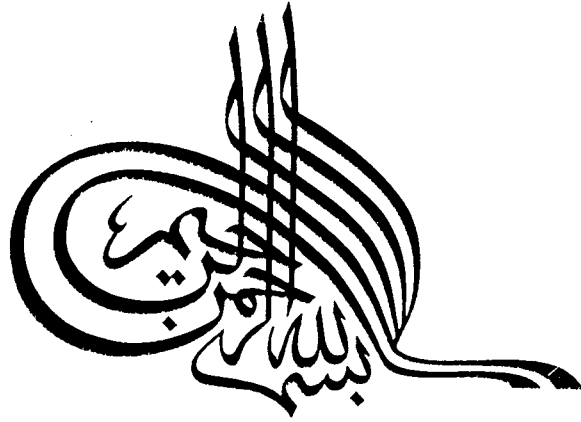
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2005



رَبِّهِ أَوْزَعْنَاهُ أَنْ أَشْكُرَ نِعْمَتَكَ إِلَهُ أَنْعَمْتَ عَلَاهُ وَعَلَاهُ

وَالصَّالِحِينَ وَأَنْ أَعْمَلَ صَالِحًا يَرْضَاهُ وَأَكْرِمَنِي بِرَحْمَتِكَ

فِي عِبَادَتِكَ الصَّالِحِينَ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
الْعَظِيمِ



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SYNTHESIS AND EVALUATION OF SOME STYRENE - ALKYL METHACRYLATE COPOLYMERS

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Acknowledgement

First of all, thanks to **GOD**, for helping me to accomplish this work properly. I'm greeting and give all my thanks and express my deep appreciation to:

I would like to thanks and express my deep love and sincerest appreciation to **Prof. Dr. Abdel Fattah Fadel Shaaban**, Professor of Organic Chemistry, Faculty of Science, Zagazig University, Benha Branch and **Prof. Dr. Hamdi H. Abou El Naga**, Consultant of Petroleum and Petrochemical Industries, whom suggested and supervised the work, for their support and guidance throughout my whole work.

Also, I would like to thanks and express my deep love and sincerest appreciation to **Prof. Dr. Mohamed Morsy Mohamed Azab**, Professor of Organic Chemistry, Faculty of Science, Zagazig University, Benha Branch. for his valuable advises, great help, continuous encouragement and support with valuable discussion and kind supervision during the preparation of this work.

Thanks are due to **Dr. Mossad Attia El Kasabe**, General Manager of research and development department, Alexandria Company for Petroleum Additives (ACPA), for support, encouragement and kind supervision.

Many thanks and appreciation to the staff of research center, Misr Petroleum Company. Special thanks are due to:

- **Prof. Dr. Wedad M. Abdel Azim**, Manger of Analytical research department.
- **Chemist. Mohamed Fakhre**,
- **Chemist. Sahar A. Mazen**,
- **Chemist. Ahmed Abdel Rahman**

For their constant support and encouragement.

I am most grateful to all these people and those, with whom I have made acquaintance in order to retrieve information, who shared with me a lot of valuable and indispensable data.

Finally, I would like to thank my family for their encouragement and great patience.

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AIM OF THE WORK

This study aimed at establishing an effective methods to prepare styrene alkyl methacrylate copolymers, which can be used as viscosity index improvers and/or pour point depressants for lubricating oils.

Different alkyl methacrylate monomers have been used through this work.

PLAN OF WORK

- I) Carrying out copolymerization reactions between two or more than one type of monomers with styrene to produce some copolymers, these reactions include:
 - 1- Binary copolymerization of alkylmethacrylates with styrene.
 - 2- Quaternary copolymerization of alkylmethacrylates with styrene.
- II) Characterization of prepared copolymers via:
 - 1- IR spectroscopy.
 - 2- ^1H NMR spectroscopy.
 - 3- Molecular weight.
- III) Evaluation of prepared copolymers as:
 - 1- Viscosity index improver (V.I.I.).
 - 2- Pour point depressants (P.P.D.).
- IV) Comparative evaluation with imported commercial additives

Introduction